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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,115	01/14/2002	David Appleyard	48903 DIV	6661
26474	7590	10/21/2003	EXAMINER	
KEIL & WEINKAUF 1350 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			LU, C CAIXIA	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/043,115

Applicant(s)

APPLEYARD ET AL.

Examiner

Caixia Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. Claims 1, 2, and 4-5 are rejected under 35 U.S.C. 103(a) as obvious over Kashiwa et al. (US 4,668,753) for the same rationale as set forth in the previous office action, Paper No. 12.

***Response to Arguments***

2. Applicant's arguments filed on August 21, 2003 have been fully considered but they are not persuasive.

Applicants assert that the ethylene content of the working examples ranges from 0.2 to 0.6 wt.% which is out side of the range of 0.7 to 1.4 wt. % of the instant claims and, thus, conclude that the reference teaches away form the parameters of applicants' claims. The examiner disagrees. As indicated in the previous office action, Paper No. 12:

--It is noted that the ethylene contents of Kashiwa's working examples are not in the range of 0.7 to 1.4 wt.% of the instant claims, e.g., the ethylene content of Kashiwa's Example 3 is 0.9 mole% (0.6 wt.%), the highest of the three working examples.

However, Kashiwa does expressly teach the upper limit of the ethylene content of the copolymer to be 2.0 mole % (1.3 wt %) which encompasses that of the instant claims.--

Reference is taken in its entirety; isolated teaching should not be used to against its entirety.

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Applicants assert that the isotactic values (Iso), referred to by Kashiwa et al., referred to the triads-tacticity (%) structure of the polymer chains, are not directly related to the copolymer xylene soluble content. This is contradictory to what is commonly accepted in the art. For example, Table 2-1 of page 17 of Yamagihara et al. (EP 0 712 869 A1) demonstrates that the xylene insoluble increases (or the xylene soluble decrease) as the isotacticity increases.

Applicants argue that Kashiwa's polymerization process and the process of the instant claims are not substantially similar to each other because in Kashiwa's process, the catalyst is supported on magnesium chloride and the copolymer is prepared in slurry while the catalyst of the instant claims is supported on inorganic oxide and the copolymer is prepared in gas phase. This is incorrect. The microstructure of the copolymer is controlled by the catalytic center of the catalyst. When copolymers are resulted from catalysts with identical or substantially identical activity centers, the polymer structures resulted from those catalysts are expected to be identical or substantially identical regardless a gas phase polymerization or a slurry polymerization. Since inorganic oxide support in the catalyst is not a part of the catalytic center, it will not affect the polymer structure as well. Inorganic support such as silica is commonly used in the catalyst for gas phase polymerization to improve the operability of the polymerization bed. Since the active ingredients of reference's catalyst and those of the instant claims are substantially identical to each other, one would have expected the structures of copolymer of the reference and that of the instant claims to be identical or substantially identical to each other.

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Applicants argue that the following statement is hindsight.

--At the time of the invention, a skilled artisan would have understood that as the ethylene content of the propylene/ethylene copolymer increases, the isotacticity of the copolymer decreases, and the processability of the copolymer with higher ethylene content would be improved because the copolymer is less crystalline--.

Such a statement is the well-accepted principle not hindsight and such is taught in Kashiwa (col. 2, lines 2-33). The proper motivation requires the prior art to suggest a benefit accruable from the modification. Any other benefits mentioned by the applicants would not change the expected benefit from the incorporation of ethylene to the propylene polymer. Applicants indicate that, in Table 2 of page 28, the 1-butene content of Example 2 is lower than that of Example 3, yet the polymer of Example 2 has higher processability index compared to that of Example 3. This comparison does not provide any meaningful conclusion to contradict the benefit cited by the examiner since the comparison is not based on the even ground. For example, there is more hydrogen used in Example 2 than that of Example 3, one would have expected that the molecular weight of Example 2 to be lower than that of Example 3, thus, the lower molecular weight property of polymer of Example 2 would contribute the easier processability of the polymer. As for applicants arguments over Comparative Examples, by analysis the data disclosed in Table 1, one would conclude that, e.g., the polymer of Comparative Example D should have lowest isotacticity and molecular weight among the comparative example since more hydrogen and no electron donor is used in the polymerization process, thus, the polymer should be most easier to process because, in

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general, the lower the molecular weight and isotacticity, the higher the processability. Again, the comparison does not provide any meaningful conclusion to contradict the benefit cited by the examiner.

The instant claims are directed to a propylene copolymer with the combination of narrow property ranges not the process of a gas-phase polymerization process in the presence a conventional inorganic-supported catalyst. Since all of the limitations of the copolymer are addressed, the rejections are deemed proper and, thus, maintained.

### ***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (703) 306-3434. The examiner can normally be reached on 9:00 a.m. to 3:30 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703) 308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1193.



Caixia Lu, Ph. D.  
Primary Examiner  
Art Unit 1713

October 15, 2003